# Bosch 19-inch High-resolution LCD Monitor

UML-190-90

BOSCH

**en** Installation Manual

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# 1 Safety

## 1.1 Important safety instructions

Read, follow, and retain for future reference all of the following safety instructions. Heed all warnings on the unit and in the operating instructions before operating the unit.

1. **Heat Sources -** Do not install the unit near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.
2. **Ventilation -** Any openings in the unit enclosure are provided for ventilation to prevent overheating and ensure reliable operation. Do not block or cover these openings. Do not place the unit in an enclosure unless proper ventilation is provided, or the manufacturer's instructions have been adhered to.
3. **Water -** Do not use this unit near water, for example near a bathtub, washbowl, sink, laundry basket, in a damp or wet basement, near a swimming pool, in an outdoor installation, or in any area classified as a wet location. To reduce the risk of fire or electrical shock, do not expose this unit to rain or moisture.
4. **Object and liquid entry -** Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock. Never spill liquid of any kind on the unit. Do not place objects filled with liquids, such as vases or cups, on the unit.
5. **Lightning -** For added protection during a lightning storm, or when leaving this unit unattended and unused for long periods, unplug the unit from the wall outlet and disconnect the cable system. This will prevent damage to the unit from lightning and power line surges.
6. **Controls adjustment -** Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may cause damage to the unit. Use of controls or adjustments, or performance of procedures other than those specified, may result in hazardous radiation exposure.
7. **Overloading -** Do not overload outlets and extension cords. This can cause fire or electrical shock.
8. **Power cord and plug protection -** Protect the plug and power cord from foot traffic, being pinched by items placed upon or against them at electrical outlets, and its exit from the unit. For units intended to operate with 230 VAC, 50 Hz, the input and output power cord must comply with the latest versions of *IEC Publication 227* or *IEC Publication 245*.
9. **Power disconnect -** Units with or without ON/OFF switches have power supplied to the unit whenever the power cord is inserted into the power source; however, the unit is operational only when the ON/OFF switch is in the ON position. The power cord is the main power disconnect device for switching off the voltage for all units.
10. **Power sources -** Operate the unit only from the type of power source indicated on the label. Before proceeding, be sure to disconnect the power from the cable to be installed into the unit.
    - For battery powered units, refer to the operating instructions.
    - For external power supplied units, use only the recommended or approved power supplies.
    - For limited power source units, this power source must comply with *EN60950*. Substitutions may damage the unit or cause fire or shock.
    - For 24 VAC units, voltage applied to the unit's power input should not exceed ±10%, or 28 VAC. User-supplied wiring must comply with local electrical codes (Class 2

power levels). Do not ground the supply at the terminals or at the unit's power supply terminals.
- If unsure of the type of power supply to use, contact your dealer or local power company.

11. **Servicing -** Do not attempt to service this unit yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
12. **Damage requiring service -** Unplug the unit from the main AC power source and refer servicing to qualified service personnel when any damage to the equipment has occurred, such as:
    - the power supply cord or plug is damaged;
    - exposure to moisture, water, and/or inclement weather (rain, snow, etc.);
    - liquid has been spilled in or on the equipment;
    - an object has fallen into the unit;
    - unit has been dropped or the unit cabinet is damaged;
    - unit exhibits a distinct change in performance;
    - unit does not operate normally when the user correctly follows the operating instructions.
13. **Replacement parts -** Be sure the service technician uses replacement parts specified by the manufacturer, or that have the same characteristics as the original parts. Unauthorized substitutions may cause fire, electrical shock, or other hazards.
14. **Safety check -** Safety checks should be performed upon completion of service or repairs to the unit to ensure proper operating condition.
15. **Installation -** Install in accordance with the manufacturer's instructions and in accordance with applicable local codes.
16. **Attachments, changes or modifications -** Only use attachments/accessories specified by the manufacturer. Any change or modification of the equipment, not expressly approved by Bosch, could void the warranty or, in the case of an authorization agreement, authority to operate the equipment.

## 1.2 Safety precautions

**DANGER!** High risk:
This symbol indicates an imminently hazardous situation such as “Dangerous Voltage” inside the product.
If not avoided, this will result in an electrical shock, serious bodily injury, or death.

**WARNING!** Medium risk:
Indicates a potentially hazardous situation.
If not avoided, this could result in serious bodily injury or death.

**CAUTION!** Medium risk:
Indicates a potentially hazardous situation.
If not avoided, this may result in minor or moderate injury.
Alerts the user to important instructions accompanying the unit.

**CAUTION!** Low risk: (without safety alert symbol)
Indicates a potentially hazardous situation.
if not avoided, this may result in property damage or risk of damage to the unit.

**NOTICE!**
This symbol indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.

## 1.3 Important notices

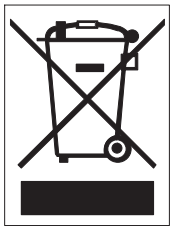
**Accessories -** Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury and/or serious damage to the unit. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer. When a cart is used, use caution and care when moving the cart/apparatus combination to avoid injury from tip-over. Quick stops, excessive force, or uneven surfaces may cause the cart/unit combination to overturn. Mount the unit per the manufacturer's instructions.

**All-pole power switch -** Incorporate an all-pole power switch, with a contact separation of at least 3 mm in each pole, into the electrical installation of the building.
If it is needed to open the housing for servicing and/or other activities, use this all-pole switch as the main disconnect device for switching off the voltage to the unit.

**Coax grounding:**

- Ground the cable system if connecting an outside cable system to the unit.
- Connect outdoor equipment to the unit's inputs only after this unit has had its grounding plug connected to a grounded outlet or its ground terminal is properly connected to a ground source.
- Disconnect the unit's input connectors from outdoor equipment before disconnecting the grounding plug or grounding terminal.
- Follow proper safety precautions such as grounding for any outdoor device connected to this unit.

U.S.A. models only - *Section 810* of the *National Electrical Code, ANSI/NFPA No.70*, provides information regarding proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.



**Disposal -** Your Bosch product was developed and manufactured with high-quality material and components that can be recycled and reused. This symbol means that electronic and electrical appliances, which have reached the end of their working life, must be collected and disposed of separately from household waste material. Separate collecting systems are usually in place for disused electronic and electrical products. Please dispose of these units at an environmentally compatible recycling facility, per *European Directive 2002/96/EC*.

**Environmental statement -** Bosch has a strong commitment towards the environment. This unit has been designed to respect the environment as much as possible.

**Electrostatic-sensitive device -** Use proper CMOS/MOS-FET handling precautions to avoid electrostatic discharge.
NOTE: Wear required grounded wrist straps and observe proper ESD safety precautions when handling the electrostatic-sensitive printed circuit boards.

**Fuse rating -** For security protection of the device, the branch circuit protection must be secured with a maximum fuse rating of 16A. This must be in accordance with *NEC800 (CEC Section 60)*.

**Grounding and polarization -** This unit may be equipped with a polarized alternating current line plug (a plug with one blade wider than the other blade). This safety feature allows the plug to fit into the power outlet in only one way. If unable to insert the plug fully into the outlet, contact a locally certified electrician to replace the obsolete outlet. Do not defeat the safety purpose of the polarized plug.

Alternately, this unit may be equipped with a 3-pole grounding plug (a plug with a third pin for earth grounding). This safety feature allows the plug to fit into a grounded power outlet only. If unable to insert the plug into the outlet, contact a locally certified electrician to replace the obsolete outlet. Do not defeat the safety purpose of the grounding plug.

**Moving -** Disconnect the power before moving the unit. Move the unit with care. Excessive force or shock may damage the unit and the hard disk drives.

**Permanently connected equipment -** Incorporate a readily accessible disconnect device in the building installation wiring.

Pluggable equipment - Install the socket outlet near the equipment so it is easily accessible.

**Power disconnect -** Units have power supplied whenever the power cord is inserted into the power source. The power cord is the main power disconnect for all units.

**Rack-mount**

- Ventilation - Do not place this unit in a built-in installation or rack without proper ventilation or adhering to the manufacturer's instructions. The equipment must not exceed its maximum operating temperature requirements.
- Mechanical loading - Properly mount the equipment in a rack to prevent a hazardous condition due to uneven mechanical loading.

**SELV**

- All the input/output ports are Safety Extra Low Voltage (SELV) circuits. SELV circuits should only be connected to other SELV circuits.
- Because the ISDN circuits are treated like telephone-network voltage, avoid connecting the SELV circuit to the Telephone Network Voltage (TNV) circuits.

**NOTICE!**
This is a class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

**FCC & ICES Information**

(U.S.A. and Canadian Models Only)

This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions:

- this device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules and ICES-003 of Industry Canada. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and radiates radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his expense.

Intentional or unintentional modifications, not expressly approved by the party responsible for compliance, shall not be made. Any such modifications could void the user's authority to operate the equipment. If necessary, the user should consult the dealer or an experienced radio/television technician for corrective action.
The user may find the following booklet, prepared by the Federal Communications Commission, helpful: *How to Identify and Resolve Radio-TV Interference Problems*. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

**Disclaimer**

Underwriter Laboratories Inc. (“UL”) has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested fire, shock and/or casualty hazards as outlined in UL's *Standard(s) for Safety for Information Technology Equipment, UL 60950-1*. UL Certification does not cover the performance or reliability of the security or signaling aspects of this product.
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**NOTICE!**

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**More information**

For additional information, please contact the Bosch Security Systems location nearest you or visit our web site at www.boschsecuritysystems.com

## 1.4 Customer Support and Service

If this unit needs service, contact the nearest Bosch Security Systems Service Center for authorization to return and shipping instructions.

**Service Centers**

**USA**

Telephone: 800-366-2283 or 585-340-4162
Fax: 800-366-1329
Email: cctv.repair@us.bosch.com

**Customer Service**

Telephone: 800-289-0096
Fax: 585-223-9180
Email: security.sales@us.bosch.com

**Technical Support**

Telephone: 800-289-0096
Fax: 585-223-3508 or 717-735-6560
Email: technical.support@us.bosch.com

**Repair Center**

Telephone: 585-421-4220
Fax: 585-223-9180 or 717-735-6561
Email: security.repair@us.bosch.com

**Canada**

Telephone: 514-738-2434
Fax: 514-738-8480

**Europe, Middle East & Asia Pacific Region**

Telephone: 44 (0) 1495 274558
Fax: 44 (0) 1495 274280
Email: rmahelpdesk@solectron.com

**More information**

For additional information, please contact your Bosch Security Systems representative or visit our web site at www.boschsecurity.com

# 2 Unpacking

This equipment should be unpacked and handled with care. If an item appears to have been damaged in shipment, notify the shipper immediately.

Verify that all the parts listed in the Parts List below are included. If any items are missing, notify your Bosch Security Systems Sales or Customer Service Representative.

The original packing carton is the safest container in which to transport the unit and must be used if returning the unit for service. Save it for possible future use.

## 2.1 Parts List

The following table lists the parts included:

| Quantity | Part |
|---|---|
| 1 | UML-190-90 Color LCD Flat Panel Monitor |
| 1 | Installation manual |
| 2 | Power Cords, 3-wire with grounded plug 1.8 m (6 ft) long:<br>one with a U.S plug type and one with a European Continental plug type |
| 1 | VGA to VGA (D-SUB) cable, 1.5 m (5 ft) |
| 1 | Power Supply (brick) 12 V, 4.1 VA, 100-240 VAC; 50/60 Hz |

# 3 Exploded View

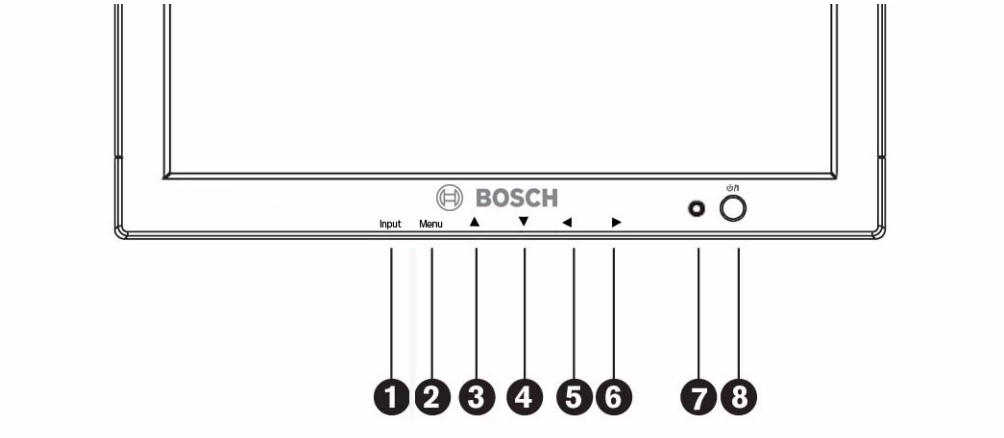


**Fig. 3.1** Front Panel UML-190-90

| Reference # | Button | Description | |
|---|---|---|---|
| 1 | Input Button | Selects the signal to be displayed | |
| 2 | Menu Button | Selects the on-screen display (OSD) | |
| 3 | ▲ | Adjusts the value when in the OSD | Scrolls up in the OSD |
| 4 | ▼ | Adjusts the value when in the OSD or auto adjusts when in PC mode | Scrolls down in the OSD |
| 5 | ◀ | Decreases the value when in the OSD | Scrolls left in the OSD |
| 6 | ▶ | Increases the value when in the OSD | Scrolls right in the OSD |
| 7 | Not Used. | | |
| 8 | Power Button / LED Indicator | Display power (On/Off)<br>Power On (green)<br>Standby, suspend, active Off (amber)<br>Unsupported mode (green)<br>Power Off (red) | |

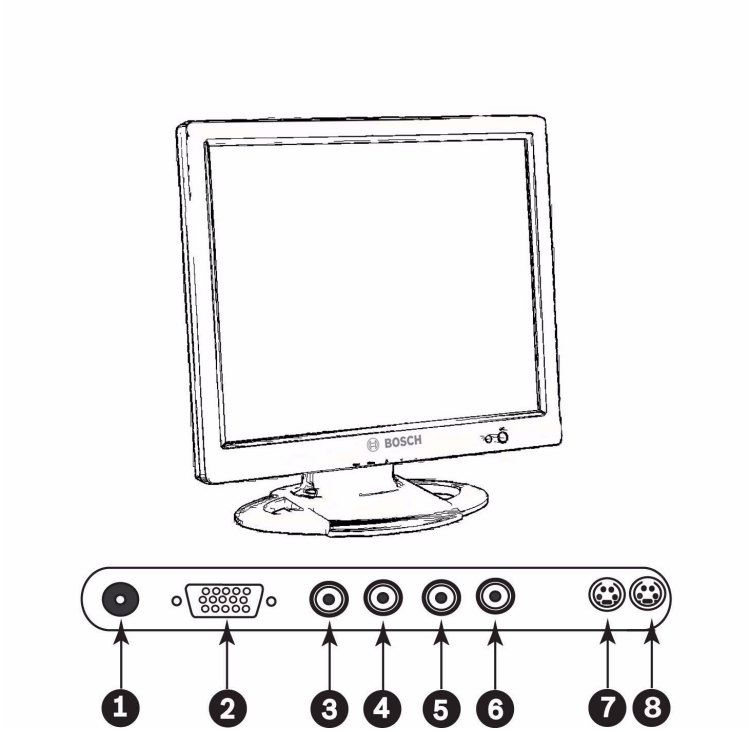


**Fig. 3.2** Bottom Panel UML-190-90

| Reference # | Connector | Description |
|---|---|---|
| 1 | DC 12 V IN | 4.1 VA |
| 2 | D-SUB IN | PC Signal Input |
| 3 | VIDEO 1 (AV1) IN | Composite signal Input for AV1 |
| 4 | VIDEO 1 (AV1) OUT | Video looping output for AV1 |
| 5 | VIDEO 2 (AV2) IN | Composite signal Input for AV2 |
| 6 | VIDEO 2 (AV2) OUT | Video looping output for AV2 |
| 7 | S-VIDEO (Y/C) IN | Y/C separated signal input |
| 8 | S-VIDEO (Y/C) OUT | Y/C separated signal looping output |

# 4 Description

The UML-190-90 19-inch (48-cm) Color Panel Display Monitor displays PAL or NTSC standard color pictures in CCTV systems. The UML-190-90 monitor includes two (2) looping Composite Video BNC connector inputs, and one (1) looping Y/C (S-Video) input using a 4-pin mini-DIN. In addition, this model works with a VGA signal.
Monitor control functions are accessed via the front panel push buttons and the multi-language On-screen Display (OSD). See *Figure 3.1* on page 8 for front panel descriptions.

## 4.1 Features

This high-performance, 19-inch Color Panel Display Monitor with 1280 X 1024 pixels resolution has been designed to display Analog VGA and Composite Video signals.

- 90 to 264 VAC Power Supply
- NTSC/PAL Auto-Detect
- 1280 x 1024 High-Resolution Display
- VGA Input
- Composite Video Input
- Y/C Input (S-Video)
- On-screen Display (OSD) with Multiple Languages

## 4.2 Power

| Model No. | Rated Voltage | Voltage Range | Power at Rated Voltage | Sync Format |
|---|---|---|---|---|
| UML-190-90 | 120/230 VAC 50/60 Hz | 90 to 264 V | 45 W (max) | NTSC/PAL |

# 5 Installing the UML-190-90

This chapter outlines the procedures needed to install the UML-190-90 Series. A qualified service person should install the monitor and adhere to all local codes.

## 5.1 Mounting the UML-190-90

The UML-190-90 is designed to be used on a desktop or mounted to a wall or rack.

### 5.1.1 Desktop Installation

The UML-190-90 monitor is delivered with a 3-pole US-style power cord and a 3-pole Euro-style power cord. Use the US-style power cord where 120 VAC, 60 Hz power is available; and use the Euro-style power cord where 230 VAC, 50 Hz power is available. The monitor automatically adjusts to either power input voltage.

### 5.1.2 Wall Mount Installation

The square mounting holes (100 mm (3.9 in.) centers) can be used with wall mount brackets UMM-LW-20B fixed or UMM-LW-30B swivel/tilt. To install the wall mount, do the following:

1. Remove the UML-190-90 base from the LCD panel section by unscrewing the four (4) holding screws before separating the base from the panel.

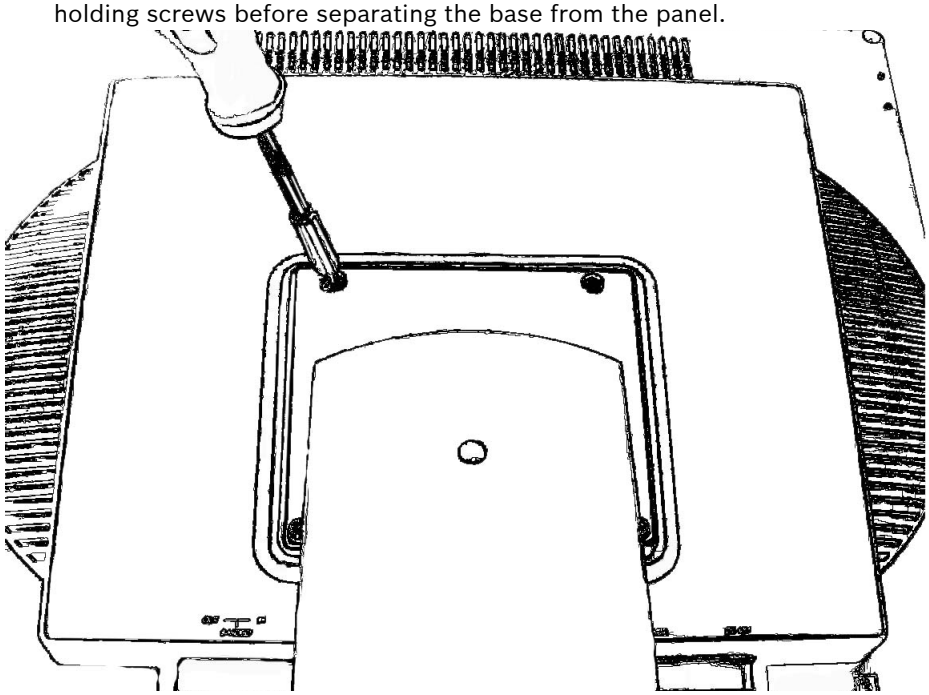

**Fig. 5.1** Removing the Base

**NOTICE!** Save screws for future use.

2. Mount the unit to the mounting device (not provided) using the four (4) mounting holes on the rear panel. The square mounting hole patterns are standard on 100 mm (3.9 in.) centers.

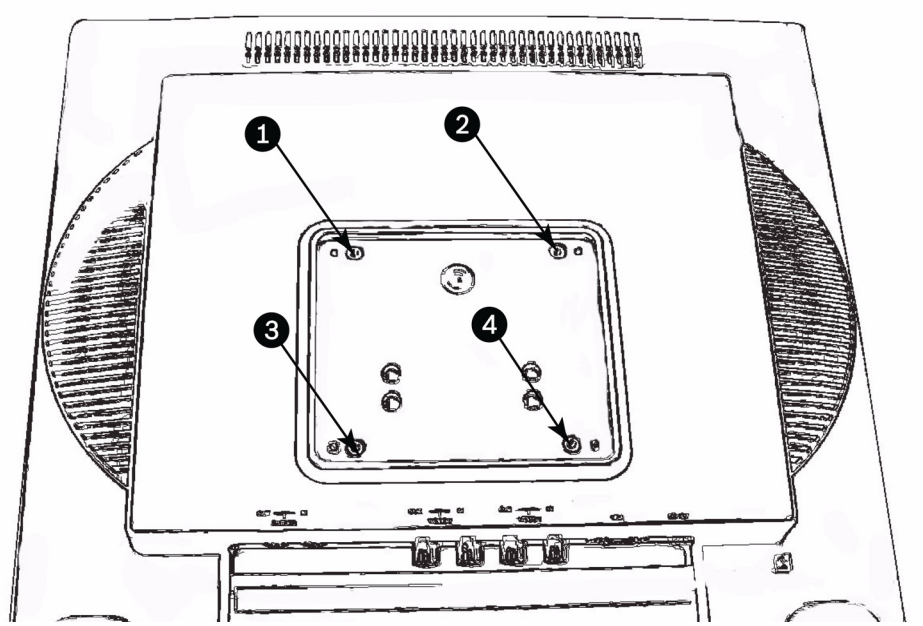


**Fig. 5.2** Mounting the Device

## 5.2 Connecting the Composite Video Signal to the Monitor

There are two (2) BNC connectors located on the rear of the monitor for composite video input and two (2) BNC connectors for composite video outputs (see *Figure 3.2* on page 9). NOTE: All video inputs are active loop-through. The impedance is automatically set to 75 ohm by the input of the signal on the input connector, while operating in a single connection mode (see *Figure 5.5* on page 14). If a cable is also connected to the output connector, the video signal can be passed on to another monitor connected to it via the active loop-through function. Up to three (3) monitors may be connected in this manner (see *Figure 5.6* on page 14).

**NOTICE!** To select between AV1 and AVI, press Input (*Figure 3.1* on page 8, Item 1) located on the front of the monitor.

## 5.3 Connecting the Y/C (S-Video) Signal to the Monitor

There is one (1) mini-DIN type connector for the S-Video (Y/C) input (see *Figure 5.3* on page 13).

NOTE: Both Y and C inputs are terminated with 75 ohm.

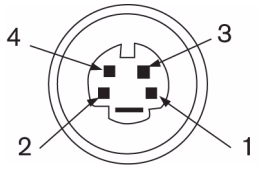


**Fig. 5.3** Y/C Connection Pinout

| Reference | Input |
|---|---|
| 1 | GND |
| 2 | GND |
| 3 | Y-signal IN or OUT |
| 4 | C-signal IN or OUT |

## 5.4 Connecting the PC Signal to the Monitor

The monitor can be connected to the analog VGA signal by using the provided VGA cable (D-SUB to D-SUB).

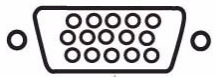

**Fig. 5.4** VGA Input

## 5.5 Ventilation

To prevent overheating, ensure that the ventilation openings on the rear of the monitor are not covered.

## 5.6 Single / Multiple Monitor Configuration

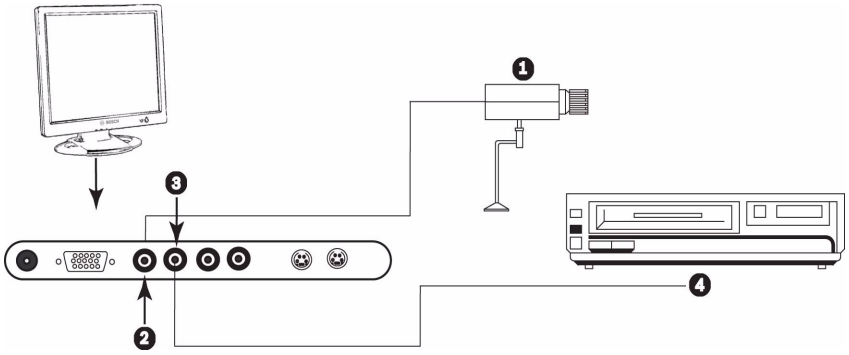


**Fig. 5.5** Single Monitor Configuration

| Reference # | Description |
|---|---|
| 1 | Video Camera |
| 2 | VIDEO 1 (AV1) IN |
| 3 | VIDEO 1 (AV1) OUT |
| 4 | VCR |

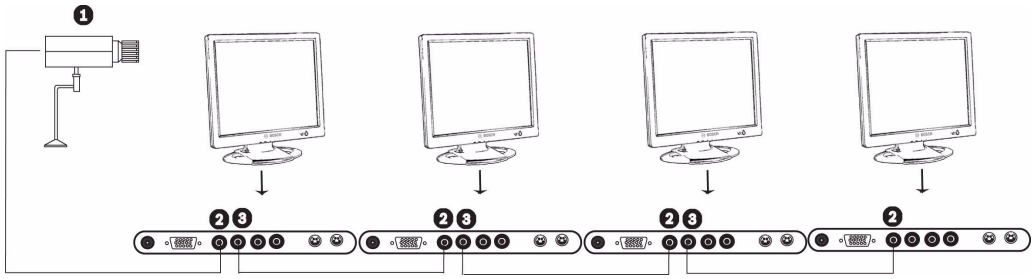


**Fig. 5.6** Multiple Monitor Configuration

| Reference # | Description |
|---|---|
| 1 | Video Camera |
| 2 | VIDEO 1 (AV1) IN |
| 3 | VIDEO 1 (AV1) OUT |

# 6 Navigating the Monitor

## 6.1 Navigating the Front Panel

Use the front panel to make any necessary OSD adjustments to the UML-190-90. See the figure below for an explanation of the front panel.

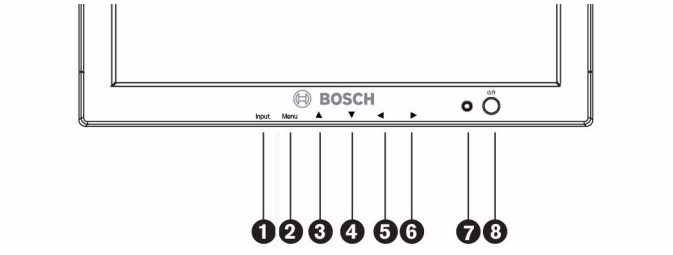


**Fig. 6.1** Front Panel Buttons

| Reference | Button | Description | |
|---|---|---|---|
| 1 | Input Button | Selects the signal to be displayed. Choices are: PC, AV1, AV2, or S-Video. | |
| 2 | Menu Button | Selects the on-screen display (OSD) | |
| 3 | ▲ | Adjusts the value when in OSD | Scrolls up in the OSD |
| 4 | ▼ | Adjusts the value when in OSD or auto adjusts when in PC mode | Scrolls down in the OSD |
| 5 | ◀ | Decreases the value when in OSD | Scrolls left in the OSD |
| 6 | ▶ | Increases the value when in OSD | Scrolls right in the OSD |
| 7 | Not Used. | | |
| 8 | Power Button / LED Indicator | Power On (green)<br>Standby, suspend, active off (amber)<br>Unsupported mode (green)<br>Power Off (red) | |

## 6.2 Navigating the Monitor On-screen Display (OSD)

The UML-190-90 has two (2) modes, Video and VGA. The UML-190-90 is programmed through the on-screen display (OSD) menus. Each on-screen display (OSD) shows a list of parameters or submenus that can be selected by the operator. To access the OSD menus, press the Menu button. Use the front panel of the UML-190-90 to make any necessary adjustments to the OSD. To navigate the set up menus, follow the steps below:

1. Connect the CVBS or VGA cable.
2. If required, press the Input button until a signal is displayed. NOTE: Menus are not available without a signal applied.
3. Power on the unit by pressing the power button (see *Figure 6.1* on page 15).
4. Press the Menu button to activate the main menu selections (see *Figure 6.1* on page 15).
5. Press the ◄ and ► buttons to navigate in selecting a main menu.
6. Press the Menu button to enter into the selected main menu.
7. Press the ▼ and ▲ button to toggle the OSD values.

When finished, scroll to Exit and press the Menu button. NOTE: If there is no Exit button, press the Menu button.

## 6.3 On-screen Display Menus

There are seven (7) on-screen menus that allow you to customize your settings. Press the Menu button to access the OSD menu.

| Icon | Menu | Function |
|---|---|---|
| | Input Source | Enables or disables the input selections. Selects the video source. Choices are: PC, AV1, AV2, or S-Video. |
| | Screen | Adjusts the Brightness, Contrast, Saturation, Hue, and the Sharpness level for video performance of the OSD. |
| | Audio | Not available. |
| | OSD (on-screen display) | Adjusts the H. Position, V. Position, Transparency, OSD Timer, and Language. Language choices are: English, French, German, Italian, Dutch, and Spanish. |
| | Color (PC mode) | Adjusts the color temperature to 9300, 6500, and user (factory default is 9300). |
| | Not available. | |
| | Utility | Enables the user to reset all settings to the factory default values and allows the user to lock or unlock the control key. |
| | Exit | Enables the user to turn on and off the OSD menu, and displays the following information: horizontal frequency, vertical frequency, and the firmware version number. |

## 6.4 Video Mode

To access the Input Source, press the Menu button on the front panel of the monitor, then press the arrows to select the Input Source submenu.

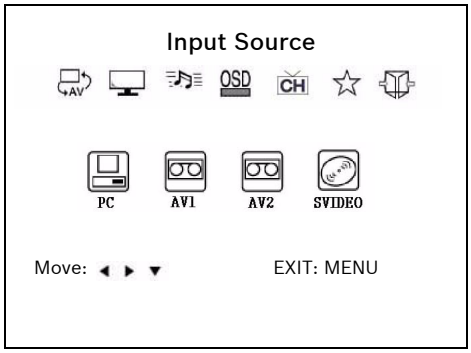


**Fig. 6.2** Input Source Menu

## 6.5 Screen

To access the Screen, press the Menu button on the front panel of the monitor, then press the left and right arrows to select the Screen icon. Press the up and down arrows to select the Screen submenu.

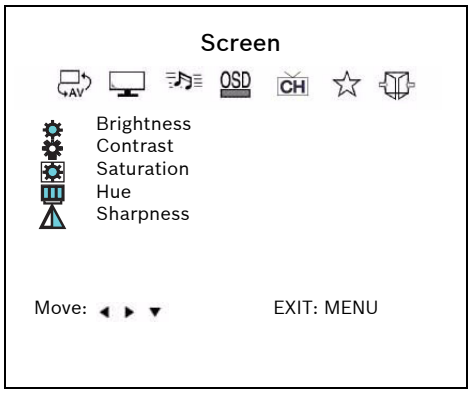


**Fig. 6.3** Screen Menu (Video Mode)

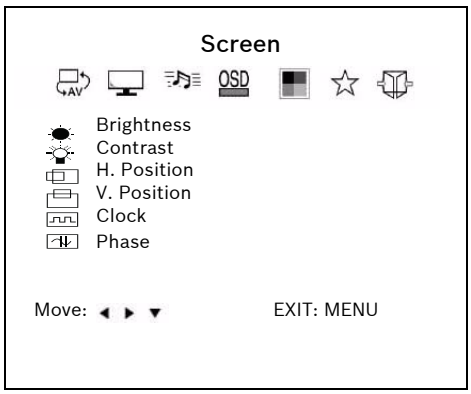


**Fig. 6.4** Screen Menu (PC Mode)

| Submenu | Definition |
|---|---|
| Brightness | Adjusts the brightness level for video performance (range 0-100%). |
| Contrast | Adjusts the contrast level for video performance (range 0-100%). |
| Saturation | Adjusts the saturation level for video performance (range 0-100%). |
| Hue | Adjusts the overall intensity of the screen (range 0-100%). |
| Sharpness | Adjusts the sharpness level for video performance (range 0-100%). |
| H. Position (PC mode) | Adjusts the horizontal position for the desktop (range 0-100%). |
| V. Position (PC mode) | Adjusts the vertical position for the desktop (range 0-100%). |
| Clock | Adjusts the best picture quality by adjusting the horizontal size of the video displayed (range 0-100%). |
| Phase | Adjusts for best picture quality by adjusting for sharpness of vertical lines (range 0-100%). |

## 6.6 Audio

Not available on this monitor.

## 6.7 OSD

To access the OSD, press the Menu button on the front panel of the monitor, then press the left and right arrows to select the OSD icon. Press the up and down arrows to select the OSD submenu.

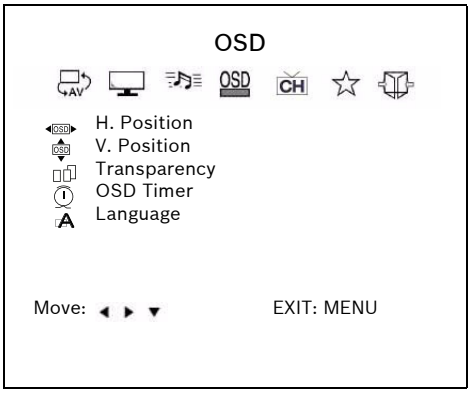


**Fig. 6.5** OSD Menu

| Submenu | Definition |
|---|---|
| H. Position | Adjusts the horizontal position for the OSD menu (range 0-100%). |
| V. Position | Adjusts the vertical position for the OSD menu (range 0-100%). |
| Transparency | Adjusts the transparency level for video performance (0, 25, 50, and 100% increments). |
| OSD Timer | Adjusts the on-screen display time (range 5s-20s). |
| Language | Adjusts the language of the OSD. Choices are: English, French, German, Italian, Dutch, and Spanish. |

## 6.8 Color (PC mode)

To access the Color, press the Menu button on the front panel of the monitor, then press the left and right arrows to select the Color icon. Press the up and down arrows to select the Color submenu (range 0-100%).

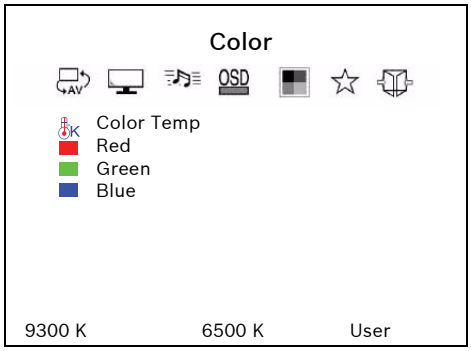


**Fig. 6.6** Color Menu

## 6.9 Utility

To access the Utility menu, press the Menu button on the front panel of the monitor, then press the left and right arrows to select the Utility icon. Press the up and down arrows to select the Utility submenu.

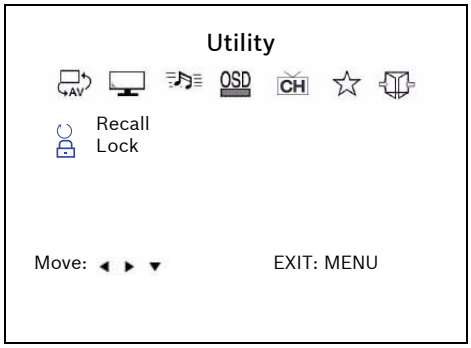


**Fig. 6.7** Utility Menu (Video Mode)

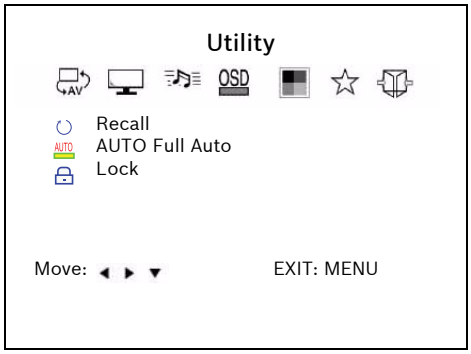


**Fig. 6.8** Utility Menu (PC Mode)

| Submenu | Definition |
|---|---|
| Recall | Restores default settings. |
| AUTO Full Auto | Auto synchronizes screen to graphics adaptor. When selected, displays “Auto in Process...”. |
| Lock | Locks user from accessing the monitor OSD menus. To unlock, hold down the menu and up arrow keys together for three (3) seconds. |

## 6.10 Exit

To access the Exit menu, press the Menu button on the front panel of the monitor, then press the left and right arrows to select the Exit icon, then press the menu buttons to exit the OSD.

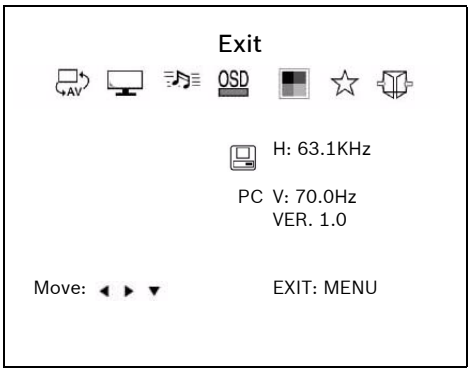


**Fig. 6.9** Exit Menu

# 7 Power Management

This monitor features a power management system to “power down” upon receipt of the display power management signaling (DPMS) from a DPMS video card.
The DPMS-compliant video card performs this signaling system through not sending horizontal, vertical, or sync signal.
This monitor enters an appropriate mode through identifying each of the three modes of the signaling system.

## 7.1 Power Consumption

| Mode | Power Consumption |
|---|---|
| ON | 45 W |
| STANDBY | <5 W |
| SUSPEND | <5 W |
| ACTIVE OFF | <5 W |

## 7.2 LED Indicator

The power management feature of the monitor is comprised of four stages: On (Green), Standby, Suspend, Active Off (Red & Green) and Unsupported mode (Green).

| Mode | LED Color | Monitor Operation |
|---|---|---|
| ON | Green | Normal operation. |
| STANDBY | Amber | Screen blanks after idle time and some electronic circuits or all circuitry in the monitor shut down. |
| SUSPEND | | |
| ACTIVE OFF | | |
| UNSUPPORTED MODE | Green | Normal operation but the screen displays error message. |
| POWER OFF | Red | Not operational. |

# 8 Trouble Shooting Guide

| Problem | Solution |
|---|---|
| No image is displayed on screen | 1. Check that the power cord of the monitor is securely connected into the wall outlet or grounded extension cable or strip.<br>2. Power switch should be in the ON position and the LED lit.<br>3. Check that the Brightness and/or Contrast adjustments of the display have not been turned down to minimum levels. |
| “Check Input Signal” message is displayed in PC mode | 1. The signal cable should be completely connected to the video card/computer.<br>2. The video card should be completely seated in its slot and the computer switched ON. |
| Display image is not centered, is too small, or too large in the PC mode | Push the down key to activate the Autoset function. |
| Vertical or horizontal noise is present in the picture | Adjust the Clock and Phase in the OSD submenu. |
| Incorrect colors | 1. Press the Menu button on the front panel of the monitor, then press the right arrow to select the Color menu. Press the down arrow on the front panel and select 9300K or 6500K.<br>- or -<br>2. Press the Menu button on the front panel of the monitor, then press the right arrow to select the Utility menu. Press the down arrow on the front panel and select Recall to reset to the default settings. |
| The error message “Unsupport Mode” is displayed | PC is operating with either a resolution or timing mode that is not supported by the UML-190-90. Change the PC timing mode to one of the valid combinations below:<br>640 x 480; 60/72/75 Hz<br>800 x 600; 60/72/75 Hz<br>1024 x 768; 60/70/75 Hz<br>1280 x 1024; 60/75 Hz |

# 9 Maintenance

To clean the LCD panel, wipe off water droplets or oil immediately with absorbent cotton or a soft lint-free cloth. Staining and discoloration may occur if left on the panel for long periods.

If the surface (polarizer) of the LCD panel is dirty or stained, use absorbent cotton or a soft lint-free cloth to remove the residue as follows:

1. Turn off the computer or display.
2. Do not spray any liquid directly on the screen. Dampen a clean, soft, lint-free cloth with water only (using a paper towel or dirty cloth can scratch the screen).
3. Gently wipe the screen starting from the top of the screen to bottom wiping in a downward motion. Be careful not to press too hard to avoid damaging the screen.
4. To avoid streaking, wipe the screen again with another clean, dry, lint-free cloth.

**NOTICE!** If water does not work, use a mild cleaner labeled for use with LCD panels, available at office supply stores.

Do not use any of the following as a cleaning agent:

- Ketone type materials
- Ethyl alcohol
- Ethyl acid
- Tolulene
- Methyl chloride
- Ammonia

Use of these materials may permanently damage the polarizer due to a chemical reaction.

# 10 Technical Specifications

### Electrical

| | |
|---|---|
| Rated Voltage | 120/230 VAC, 50/60 Hz |
| Voltage Range | 90 to 264 |
| Power at Rated Voltage | 45 W operation, 5 W standby |
| Sync Format | PAL/NTSC |
| LCD Panel | TFT LCD |
| Screen Size (H x V) | 376 x 301 mm (14.8 x 11.9 in.) |
| Viewable Picture Area | 19 in. (48 cm) measured diagonally |
| Pixel Pitch (H x V) | 0.294 x 0.294 mm (0.01 x 0.01 in.) |
| Resolution | 1280 x 1024 pixels, 400 TVL |
| Aspect Ratio | 5:4 |
| Display Colors | 8-bit interface; 16.7 million colors |
| Response Time | 5 ms |
| Backlight | Two (2) cold cathode fluorescent tubes, rated life 50,000 hours |

### LCD Panel Optical Characteristics

| | |
|---|---|
| Luminance | 300 cd/m2, anti-glare, hard-coating treatment |
| Contrast Ratio (CR) | 1000:1 |
| Viewing Angle | 160° horizontal, 160° vertical @ CR >= 10 |

| **Video Input** | |
|---|---|
| Composite Video (CVBS) | 1.0 Vp-p (0.5-1.5 Vp-p), automatic switching from 75 Ohm unbalanced termination to Hi-Z with passive loop-through operation |
| Y/C (S-video) | 0.7 Vp-p (Y-signal), 0.3 Vp-p (C-signal), 75 Ohm termination |

| **PC Input** | |
|---|---|
| Analog RGB | 0.7 Vp-p (0.5-1 Vrms) |
| PC Timing Modes | 640 x 480, 60/72/75 Hz<br>800 x 600, 60/72/75 Hz<br>1024 x 768, 60/70/75 Hz<br>1280 x 1024, 60/75 Hz |

| **Controls** | |
|---|---|
| Front Panel | Push-buttons |
| Input | Selects Video1, Video2, S-video, or VGA |
| Menu | Selects on-screen display (OSD) up cursor, down cursor/auto adjust, left cursor, right cursor |
| Power | On/Off |
| Front Panel Lockout | Multiple push-button combination |

| **On-Screen Display** | |
|---|---|
| Video Mode | Input Source, Screen, OSD, Utility |
| PC Mode | Input Screen, OSD, Color, Utility |

| **Indicators** | |
|---|---|
| LED | Power On (green)<br>Standby, Suspend, Active Off (amber)<br>Unsupported Mode (green)<br>Power Off (red) |
| On-Screen | VGA: Check input signal<br>Video: Flashes "AV1" or "AV2" when there is a black screen |

| **Connectors** | |
|---|---|
| Video1 (AV1) | Composite video: two (2) BNC (1 in, 1 out) |
| Video2 (AV2) | Composite video: two (2) BNC (1 in, 1 out) |
| Y/C (S-video) | Two (2) mini-DIN, 4-pin (1 in, 1 out) |
| VGA | One (1) VGA cable included |
| Power Input | 5.5 mm DC input jack |
| Power Adapter (Included) | Input: 100-240 VAC, 50/60 Hz<br>Output: 12 VDC, 4.2 A |

## Mechanical

| | |
|---|---|
| Cabinet Material | ABS plastic |
| Finish | Black |
| Mount | Wall mounting compatible with standard bracket, 100-mm centers, M4 thread |
| **Dimensions** | |
| Monitor with Base<br>(W x H x D) | 430 x 428 x 200 mm<br>(16.9 x 16.9 x 7.9 in.) |
| Monitor Only<br>(W x H x D) | 420 x 374 x 60 mm<br>(16.5 x 14.7 x 2.4 in.) |
| Weight | Monitor with base: 6.61 kg (14.6 lb)<br>Monitor only: 4.1 kg (9.05 lb) |
| **Environmental** | |
| Operating Temp. | 0°C to 40°C (32°F to 104°F) |
| Storage Temp. | -20°C to 60°C (-4°F to 140°F) |
| Humidity | Max. 90%, non-condensing |

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